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EXAMINER

TUGBANG, ANTHONY D

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/981,556
Filing Date: October 17, 2001
Appellant(s): SLEZAK, ARNOLD G.

MAILED
FEB 01 2006
Group 370

Mitchell K. McCarthy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 19, 2007 appealing from the Office action
(Final Rejection) mailed on August 21, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,081,990	Kuroba et al	7-2000
JP 5-205442	Ogawa, Y.	8-1993

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims.

The rejections below are repeated from the Final Rejection (mailed August 21, 2006), merely for the convenience of the board and the appellants. No new grounds of rejections have been made.

Issue I – Claims rejections – 35 U.S.C. 102

Claims 1, 3, 5, 7, 9 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuroba et al 6,081,990.

Kuroba discloses a method comprising: placing prewritten discs 20, each characterized by servo tracks that are offset in relation to a common angular reference axis around a motor hub (spindle 21), the prewritten discs placed with respect to each other disposing the angular references axes symmetrically around the motor hub; and biasing each disc in a direction of the respective angular reference axis to concentrically align the servo tracks of a first disc of the prewritten discs with the servo tracks of a second disc of the prewritten discs (see various embodiments of Figures 1a, 4, 7a, 7b, 8a and 8c).

The term “biasing” is read as the effect of balancing the disc, or movement of the disc, necessary for balancing the discs on the hub during assembly of the disc drive (see col. 8, lines 31+). The “common angular reference axis” for each disc can be read as any axis along each disc used in biasing or balancing the disc as the servo tracks will be offset in relation to this “common angular reference axis”.

Regarding Claim(s) 7, Kuroba further teaches a reference mark 22 that can be read as the “indicia”

Regarding Claim(s) 3, Kuroba further teaches that biasing includes pressingly engaging each disc, which would include an edge of each disc against the motor hub.

Regarding Claim(s) 5, because Kuroba teaches first and second discs that are biased, the biasing or balancing forces for each disc has “different nonopposite directions” because each disc can have more than one reference axis (marks 22) and thus, have different common angular reference axes disposed.

Regarding Claim(s) 9 and 21, Kuroba further teaches that the angular reference axis can comprise of a first indicia and a second indicia (see col. 6, lines 65+), i.e. more than one reference mark 22, in which the second indicia is different from the first indicia because each are at different locations. One location of the first indicia would include a first line that is coextensive with the angular reference and a second line (taken from a second or different indicia) would be angularly disposed from the first line of the first indicia. The first and second indicia of Kuroba can be said to be on different sides of the disc to the same extent that the applicant’s first and second indicia are on different sides of the disc.

Issue II – Claim rejections – 35 U.S.C. 103

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroba et al.

Kuroba discloses the claimed manufacturing method as relied upon above, further including that the first and second discs are biased with a balancing force from different directions or angles (see col. 8, lines 31+). Kuroba does not necessarily mention that the first and second disc can each be biased in “substantially opposite directions”. However, to bias or

balance the first and second disc from an opposite direction is considered to be an effective variable within the level of ordinary skill in the art of assembling discs onto a motor hub. To bias the first and second discs from different directions, including “substantially opposite directions”, are necessary to balance the discs on the motor hub for proper operation of the disc drive or disc assembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Kuroba by biasing the first and second discs from substantially opposite directions, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Kuroba by biasing the first and second discs from substantially opposite directions to achieve proper operation of the disc drive.

Issue III – Claim rejection – 35 U.S.C. 103

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroba et al in view of Japanese Patent Publication JP 5-205442, referred to hereinafter as JP’442.

Kuroda discloses the claimed manufacturing method as relied upon above in Claim 1. Kuroda does not mention that the angular reference axis includes a laser index mark.

JP’442 teaches that an angular reference axis (inner surface of discs) can include a laser index mark 12 to advantageously have quality information on the disc itself (see PURPOSE).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the angular reference axis of Kuroda by including the laser index mark, as taught by JP’442, to positively provide quality information in the disc itself.

(10) Response to Argument

Issue I

The appellants allege that the prior art does not teach that the prewritten discs have servo tracks that are “offset” in relation to a common “angular reference axis” of each disc, disposing the angular reference axes symmetrically around the motor hub, and biasing each disc in a direction of the respective angular reference axis (as recited in Claim 1). How these limitations are met by the prior art hinges on the interpretations of the terms of “offset” and “angular reference axis”.

First, the appellants assert that the term “offset” is shown in Figure 2 and is plainly disclosed in the specification. That somehow, the term offset means that the “servo tracks are nonconcentric in relation to the disc center”. The examiner urges that this statement by the appellants is false as Figure 2 shows no such offset. The specification, in its entirety, never states that the servo tracks are nonconcentric in relation to the disc center and it never recites the term “offset”. The applicant(s) specifically point to the specification (i.e. page 5, line 31 to page 6, line 2, or paragraph [0025] of US PGPub 20020178571) where the servo tracks are to be concentric with the disc drive hub axis of rotation. The examiner argues that this description of Figure 2 does not describe any relationship of the servo tracks, but discusses alignment of the disc with an alignment mark 134.

Second, the appellants argue that the terms of “angular reference axis” of each disc is determined by the direction of biasing the disc during servowriting. The appellants believe this phrase means that two or more discs are biased in the same direction in the STW during servowriting. The examiner expressly urges that no such definition for the phrase of “common

angular reference axis” of each disc is ever made in the specification. The specification does not even use the phrases a common angular reference axis, or angular reference axis, or angular reference axes.

Furthermore, the appellants attempt to use the illustration on page 8 of the brief, and the description of this illustration thereof, to help understand what is meant by the terms "offset" and "angular reference axis". The examiner notes that this illustration cannot be considered as evidence because this illustration is not shown in the figures of the specification and no such description of this illustration is made in the specification.

During examination, the examiner has given the claims their broadest reasonable interpretation consistent with the specification. *Phillips v. AWH Corp.*, 414 F.3d 1301, 75 USPQ2d 1321 (Fed. Cir. 2005).

Kuroba discloses a plurality of discs (20), with each disc being prewritten with servo track information (col. 5, lines 4, lines 5-9, col. 7, lines 14-17). The prewritten discs each have servo track information written on the surface of the disc where examples of how servo track information are formed on the disc surface being shown in Figures 11a and 11b. This servo track information is done prior to assembling the discs on a motor hub of a disc drive. The "common angular reference axis" has been interpreted by the examiner as any axis (i.e. line) along each disc used to bias or balance the disc with the prewritten servo track information on the motor hub (spindle 21). One example of a common angular reference axis can be read as a *line drawn from the reference marker 22 to the inner surface of the disc where the disc makes contact with the hub 21* (see attached "Illustration A" of Kuroba's Figure 4). The timing mark 22 is not an axis by itself, but it is a line drawn through the mark 22 (i.e. alignment mark between the disc and the

hub) and the center of the motor hub 21 that forms the common angular reference axis in order to align each disc with the motor hub. This line is an axis that has an angular position with respect to the center of the motor hub, thus an angular reference axis. So Kuroba discloses that the discs would each have servo tracks with directions of these tracks placed along each surface of each disc (see Fig. 11a through 11c), diametrically around the motor hub. The direction and location of these servo tracks formed directly on the surface of the discs would be *offset* in nearly an orthogonal manner or nearly a perpendicular relationship when compared to the direction of the common angular reference axis. Moreover, the surface of each disc extends in a plane that is orthogonal with respect to the illustrated common angular reference axis and thus, the servo tracks formed all along the surfaces of each disc would be also extend in an orthogonal manner or nearly perpendicular relationship relative to the illustrated common angular reference axis.

The examiner additionally notes that each prewritten disc can have one common angular reference axis (with marker 22), or more than one common angular reference axis (with markers 22 shown in Figures 7a or 7b) so that when all of the prewritten discs are disposed around the motor hub (e.g. col. 8, lines 31-42), the axes of all the prewritten disc would be disposed symmetrically around the motor hub. Biasing is what Kuroba discloses as the force necessary to balance each disc on the motor hub (e.g. col. 8, lines 32+), or the force necessary to shift the prewritten disc to align the discs with the motor hub (e.g. col. 7, lines 4-13). Since each disc would be biased in alignment, the prewritten servo track information on each disc would therefore also be in alignment. Alignment of the pre-written servo track information must occur, because Kuroba performs a subsequent completion of servo track writing (STW) after the discs are aligned and biased on the motor hub (col. 7, lines 14-24).

In summary, Kuroba meets all of the limitations of Claim 1 as further explained above. The appellants attempt to specifically define the terms of "offset" and "common angular reference axis" is not consistent with the specification.

Issue II

The appellants further argue that it would not be obvious to one of ordinary skill in the art to modify the invention of Kuroba by placing the pre-written discs in substantially opposite directions, as recited in Claim 6. The appellants believe this argument to be true because Kuroba does not teach all of the limitations of Claim 1.

The examiner urges that Kuroba fully meets the limitations of Claim 1 as explained above and that it would be obvious to modify Kuroba for the rationale explained in the rejections above. Moreover, since each disc of Kuroba has a common angular reference axis, disposing each of them can be achieved in substantially opposite directions, all to achieve the very same result of placing them on the motor hub.

Issue III

The appellants further argue that it would not be obvious to one of ordinary skill in the art to modify the invention of Kuroba by placing the pre-written discs with indicia comprising an indicia mark, as recited in Claim 8. Again, the appellants believe this argument to be true because Kuroba does not teach all of the limitations of Claim 1.

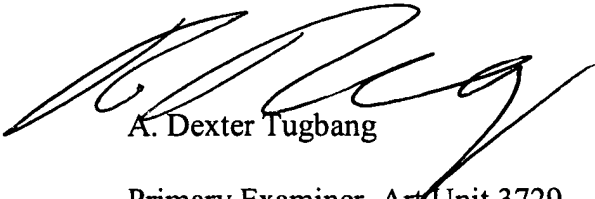
The examiner reiterates that Kuroba fully meets the limitations of Claim 1 as explained above and that it would be obvious to modify Kuroba in light of the teachings of JP'442, for the rationale and advantages suggested by JP'442.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

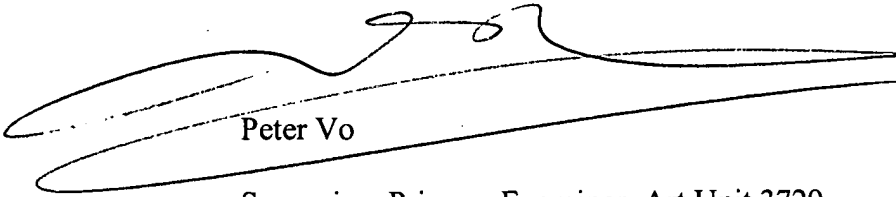


A. Dexter Tugbang

Primary Examiner, Art Unit 3729

January 30, 2008

Conferees:



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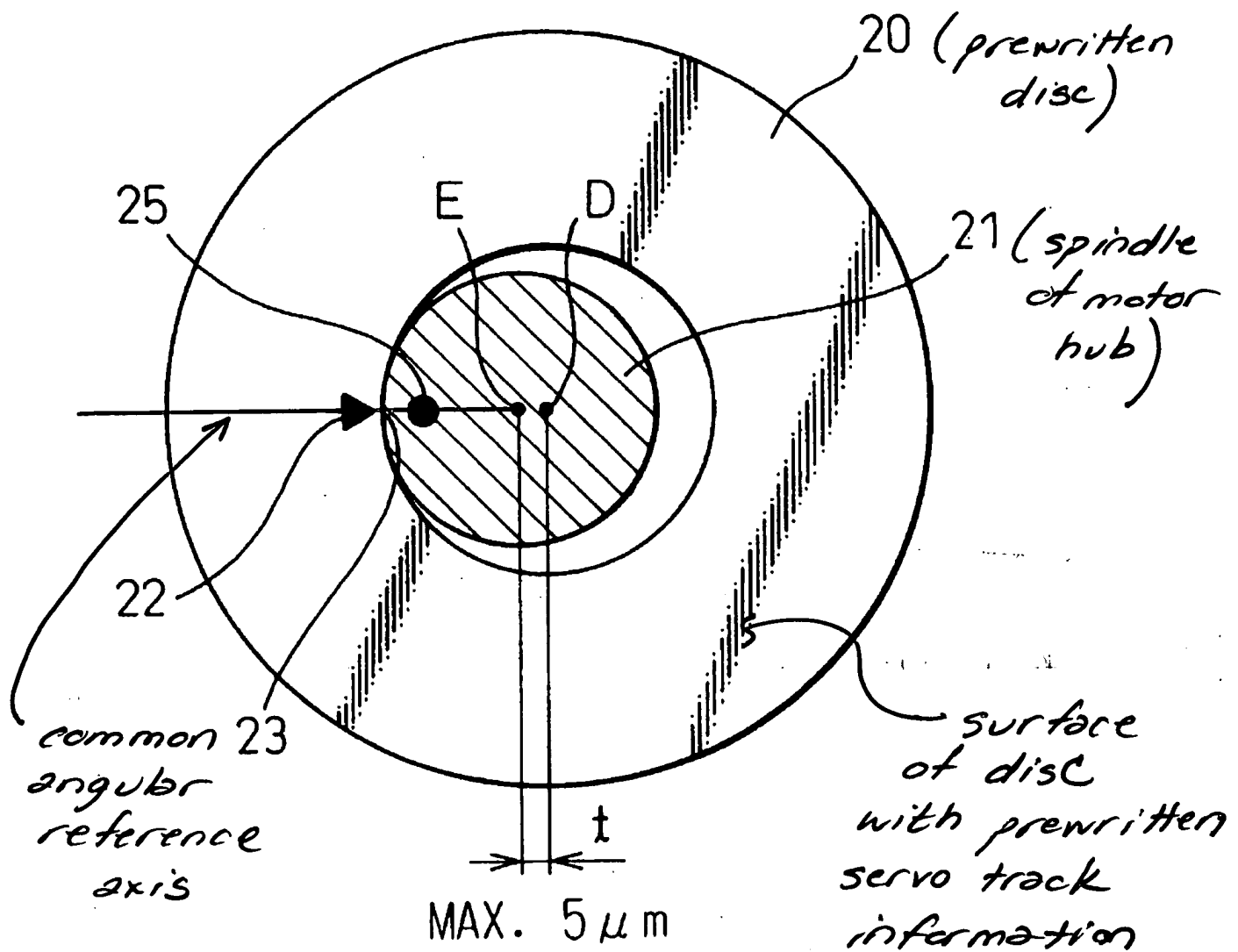
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Attachment(s)

1) Illustration A

Fig. 4

Illustration A